

18/390**B.Sc. (Third Year) Examination, 2018****COMPUTER SCIENCE****Second Paper****(Computer Architecture & Data Communication)****Time : Three Hours****Maximum Marks : 75**

Note : Answer **five** questions in **all**. Question **No.1** is **compulsory**. Answer **one** question from each unit. Marks allotted to each question are indicated on the right-hand side of the margin.

Note : The answers to short questions should not exceed 200 words and the answers to long questions should not exceed 500 words.

1. Write short answers of the following questions: 7×5=35

(a) What do you understand by Indirect addressing mode? Explain with examples.

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(b) Explain arithmetic instructions in the 8085 with illustrative examples.

(c) Explain the following terms:

Instruction format, Special purpose Registers, m-address machine, Interrupt.

(d) What is the purpose of the 'IN' and 'OUT' Instruction in 8085 microprocessor?

(e) List the different types of branching instructions of the 8085 and explain them.

(f) Differentiate between the star and ring topology in the layout of a computer network.

(g) What is Memory mapped I/O? Explain briefly.

Unit - I

2. Draw the general programming model of the 8085 microprocessor and explain its operational features together with the function of each unit.

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OR

3. Explain briefly the historical evolution of microprocessors from the initial chipsets to the present age. 10

Unit - II

4. Write an assembly language program to add two sixteen-bit numbers with array. 10

OR

5. Write an assembly language program to compute the two's complement of an 8-bit number. 10

Unit - III

6. Differentiate between: 5+5
(a) Asynchronous and synchronous Data Transfer Schemes
(b) Programmed I/O and DMA

OR

7. Explain in detail the methods of Interrupt Driven Data Transfer Scheme.
How is it different from handshaking? 10

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Unit - IV

8. Describe the OSI model with the help of a diagram and discuss the significance and function of each layer. 10

OR

9. What are the different types of media used for data communication? Discuss the merits and demerits of each one of them. 10